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Means Plus Function Language ***Published July 2004***

Cooking and patent prosecution have more in common than you might think. ***F. Jason Far-hadian*** *of* ***Century IP Group*** *(www.centuryip.com) explains how to use means plus function language effectively to draft the elements, or ingredients, of a claim.*

I. *Introduction*

A. Examples briefly explaining the format of a patent application and use of means plus function language

Recipe for a fruit cake

Ingredients:

1 cup vegetable oil
2.5 cups all-purpose flour
3.5 cups chopped fruit
0.5 cup chopped walnuts
3 extra-large eggs
2 cups sweetener
3 tsp Tia Maria
2 tsp baking powder
1 tsp baking soda
1 tsp salt
1 tsp cinnamon

How to prepare:

Preheat oven to 325 degrees Fahrenheit.
Grease and flour 10 inch spring-form cake pan; set aside.
Put oil and sweetener in bowl; for sweetener use either one cup of brown sugar and one cup of granulated sugar, or in the alternative, sufficient amount of artificial sweetener such as “sweet and low”; mix with an electric hand beater 2 to 3 seconds.
Incorporate eggs, one at a time, beating well between additions.
Sift flour, baking powder, baking soda, salt and cinnamon into separate bowl.
Incorporate into egg mixture until well blended.
Fold in Tia Maria, chopped fruit and walnuts with spatula. Pour batter into mold and bake 1.5 hours or until wooden pick inserted in center of cake emerges clean.[1]

One might think that cooking and patent prosecution have little in common. However, inasmuch as preparing a well balanced meal is dependent on the expertise of the cook and ingredients in the recipe, getting effective patent rights also depends on the skill of the patent practitioner and language used in the patent application.

A patent application, much like a recipe, is comprised of two important sections. One is the “Claim” section, where the ingredients or the major elements of the invention and their

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[1] The original recipe may be found in CHEF POL MARTIN, EASY COOKING FOR TODAY, 526 P. (Brimar Publishing, 1986). For the purposes of this paper, the original recipe has been slightly modified.

relationships are listed. The other is the "Specification" section that is a more detailed explanation of the alternative relationship between the listed elements and their interaction with their intended environment. Consider the following example:

Patent Application for a Baseball Cap

Claims:
What is claimed is:

1. A baseball cap comprising:
a head-cover,
a bill attached to the head-cover, and
adjusting means functionally engaged with the head-cover for flexible adjustment of the size of the head-cover.

Specification:
A baseball cap having a head-cover and a bill, according to one or more embodiments of the invention, is described. The head-cover is preferably made of fabric or leather. The bill is preferably sewn to the head-cover, is relatively rigid, and sufficiently large to block sun rays. An adjusting means is attached to the head-cover opposite from the place of attachment of the bill and is preferably a buckle or a button that engages an extension of the head-cover and holds it in a fixed position, whereby it provides for flexible sizing of the head-cover.

"Means plus function" language is a method for claiming an element of an invention, by describing its function rather than its structure.[2] This type of language is frequently used in drafting claims, where a specific function in the invention can be accomplished by more than one specific structure or element. For example, in the same way that either sugar or "sweet and low" can be used as sweetening ingredients in cooking, in the case of our baseball cap invention, either a buckle or a button can be used as a means for adjusting the size of the head-cover.

Thus, the above claim is composed of three elements: the head-cover, the bill, and the adjusting means. The head-cover and the bill elements are described structurally. The third element is described through the use of means plus function language as a means for flexible adjustment of the size of the head-cover. The specification portion, in turn, clarifies the claim by disclosing corresponding embodiments such as a button or a buckle that perform the function recited in the claim.

The most important goal of a patent practitioner in writing a patent claim is writing a claim that covers the broadest scope possible. Generally, the scope of a claim is determined by examining the language of the claim only, without considering the limitations described in the

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[2] *See* 35 U.S.C.A. § 112 (West 1984). Paragraph 6 of this section expressly provides for the use of functional language to describe an element, instead of recital of the structure of the element in the claim. *See infra,* note 6.

specification.[3] However, as it will be discussed in this article, if the claim portion of the application utilizes means plus function language, the specification portion of the application may play an important role in determining the scope of the claims. Thus, the language used can become very important.

B. Recent change in the interpretation and application of 35 U.S.C. § 112, Paragraph 6

Section 112, paragraph 6 of Title 35 of the United States Code (hereinafter "35 U.S.C. §112, ¶ 6" or "the Statute") provides for the use and manner of interpretation of means plus function language.[4] Last February, the Court of Appeals for the Federal Circuit (hereinafter "CAFC"), in its decision in *In re Donaldson*, *Co.* (hereinafter "*Donaldson*") mandated a change in the way the Patent and Trademark Office (hereinafter "PTO") interpreted and applied 35 U.S.C. §112, ¶ 6 during *expert* patent prosecution proceedings.[5]

Despite the provisions of the Statute to the contrary, the PTO had long held that it need not interpret claims that use means plus function language as limited to the embodiments described in the specification. The *Donaldson* decision requires the PTO to follow the provisions of the Statute by narrowly interpreting a means clause in light of the structures disclosed in the specification, the same way that the courts have interpreted it during infringement proceedings. These provisions will be explained in detail in the following paragraphs.

C. Overview of the objectives of this paper

This article will initially discuss the provisions of 35 U.S.C. § 112, ¶ 6, its legislative history, and the double standard that existed in its application, prior to *Donaldson*. Next, the article will explore the *Donaldson* decision, its two-step approach in interpretation of means plus function language, and the deficiencies of this approach. Finally, it will analyze the possible effects of this decision in patent practice, and will make recommendations on the use of means plus function language in claim drafting.

II. *35 U.S.C. § 112, ¶ 6*

A. Language of the statute, and its general provisions

The Statute provides that "[a]n element in a claim for a combination may be expressed as a means or step for performing a specified function without the recital of structure, material, or acts in support thereof, and such claim shall be construed to cover the corresponding structure, material, or acts described in the specification and equivalents thereof."

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[3] *See In re* Priest, 582 F.2d 33, 37, 199 U.S.P.Q. (BNA) 11, 15 (C.C.P.A. 1978) ("no 'applicant should have limitations of the specifications read into a claim where no express statement of the limitation is included in the claim.'") (citing *In re* Prater, 415 F.2d 1393, 162 U.S.P.Q. (BNA) 541 (C.C.P.A. 1969)).

[4] "An element in a claim for a combination may be expressed as a means or step for performing a specified function without the recital of structure, material, or acts in support thereof, and such claim shall be construed to cover the corresponding structure, material, or acts described in the specification and equivalents thereof." 35 U.S.C.A. § 112 (West 1984).

[5] Patent prosecution is a technical term that refers to the process of submitting a patent application to the PTO, and other required procedures that are necessary to persuade the office to grant a patent for the submitted application.

On the one hand, the first portion of the Statute, if interpreted on its face, broadens the scope of a claim by permitting elements of an invention to be defined as "means" for performing a function without the necessity of claiming structural limitation for that element. So, for example, in our hypothetical baseball cap invention, the adjusting means described in the claim section could be interpreted to include a hook attachment, a clamp, Velcro straps, plastic snaps, or even an elastic band that would provide for adjusting the diameter of the baseball cap for a comfortable fit.

On the other hand, the second portion of the Statute narrows the broad scope of the "means" element only to those structures or equivalents of such structures that are described in the specification. So, under the second part of the statute, the scope of the means language would be narrowed down only to those structures that are equivalent to a buckle or a button, excluding, for example, Velcro straps or elastic bands as equivalents.[6]

As it will be discussed in further detail, the PTO had chosen to only apply the first portion of the Statute in determining the scope of patent claims, thereby construing them as broadly as possible. In contrast, courts have been applying both portions of the Statute as it is expressly drafted. Thus, in infringement proceedings, courts restrict the scope of patent claims to the structures described in the specification or their equivalents, as required by the second portion of the Statute.

B. **Intent of the drafters**

One of the objectives of the Statute is to "allow greater liberality in the form of claims ...."[7] Thus, it intends to reduce the job of a practitioner by enabling him to broadly claim a range of possible alternative elements that perform the same function, without having to draft separate claims for each one.[8]

Another objective of the Statute was to overrule prior case law that had unnecessarily prohibited the use of means plus function language under certain circumstances. The United States Supreme Court, in *Halliburton Oil Well Cementing Co. v. Walker*,[9] had held that "conventionally functional language" could not be employed at the "exact point of novelty" in a combination claim. There, the Court was fearful that means plus function language as used

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[6] For a discussion that "equivalency" of structures does not necessarily mean "structural equivalence," see paragraph II.C.1.a., *infra*.

[7] *In re* Henatsch, 298 F.2d 954, 132 U.S.P.Q. (BNA) 445, 448 (C.C.P.A. 1957).

[8] There are other methods to claim alternative or interchangeable elements. For example, the drafter can use a Markush group in the claim. "A Markush-type claim recites alternatives in the form of an artificial generic expression in the form 'material *selected from the group consisting of A, B, and C*.'" JEFFREY G. SHELDON, HOW TO WRITE A PATENT APPLICATION, 6-48 to 6-49 (Practicing Law Institute 1993) (emphasis in original). However, a Markush group uses inclusive language that limits the scope of the claim only to the members of the group. In addition, the members of the group must bear some physical or chemical relationship to each other. *See* MANUAL OF PATENT EXAMINING PROCEDURE (hereinafter MPEP) § 803.02 (U.S. Department of Commerce, Patent and Trademark Office 5th ed. 1983) (latest revision March 1994).

[9] 329 U.S. 1 (1946).

would not accurately define the novel element of the invention and therefore deprive the public from an enabling disclosure.

Congress revised 35 U.S.C. § 112, in 1952, by adding the language that currently appears in paragraph six, to overrule the above decision.[10] Thus, the drafters of the Statute intended to provide the practitioner with the means to claim the elements of an invention in terms of what they do as well as what they are, as long as a reasonable person skilled in the art is enabled to build the claimed invention based on the disclosures in the application.[11]

C. Double Standard in Interpretation and Application of 35 U.S.C. §112, ¶ 6

As discussed earlier, prior to *Donaldson*, the PTO persistently mandated that its examiners not apply the second portion of the Statute, which required limitation of the scope of claims to embodiments described in specification or their equivalents. This practice was in direct conflict with the manner in which the Statute is applied and interpreted in courts during patent infringement or validity proceedings. In contrast to the PTO, the courts determine the scope of a claim in light of structures in the specification that correspond to the means language.

This double standard existed for more than forty years,[12] until it was finally resolved by *Donaldson*. The following two sections will discuss each standard in further detail, and will analyze some of the predicaments that arose as a result.

1. Infringement determination in court

Courts have consistently applied the Statute during infringement proceedings[13] to determine the scope of a patent claim that includes means plus function language.[14] The court in such proceedings will issue an injunction against the alleged infringer in two situations: first, if it finds that the device or method in question encompasses all the elements of the claimed invention; and second, if it concludes that the accused device or method is equivalent to the

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[10] *See In re* Fuettere, 319 F.2d 259, 264, 138 U.S.P.Q. (BNA) 217, 223 (1963). The court quoted Honorable Joseph Bryson, the Chairman of the House Subcommittee that was responsible for the Patent Act of 1952: "The provisions of [the Statute] in reality will give statutory sanction to combination claiming as it was understood before the *Halliburton* decision." (emphasis added). *See also* H.R. 3760, 82nd Cong., 1st Sess., §112 (1951).

[11] 35 U.S.C. § 112, paragraph one provides that "[t]he specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the ... to make and use the same ...." Thus, the first paragraph of §112 protects the public from those unclear and inaccurate claims that may be drafted under the provisions of the sixth paragraph. *See In re* Knowlton, 481 F.2d 1357, 1366, 178 U.S.P.Q. (BNA) 486, 492-493, (C.C.P.A. 1973). *See also Henatsch*, 298 F.2d at 958, 132 U.S.P.Q. at 448.

[12] To be exact, it has been forty two years from the Patent Act of 1952 to the *Donaldson* decision in February of 1994. During this period, the PTO policy was inconsistent with the express language of the Statute.

[13] An infringement proceeding is initiated by a patent owner to enforce his patent rights, in order to prevent another from making, using or selling his patented product. *See* 35 U.S.C. §271(a).

[14] *See* Palumbo v. Don-Joy Co., 762 F.2d 969, 976-77, 226 U.S.P.Q. (BNA) 5, 9-10 (Fed. Cir. 1985) (Holding that the district court, in an infringement proceeding, erred in not applying provisions of the Statute in interpreting the scope of claim that had employed means plus function language.). *See also*, *e.g.,* Perini America, Inc. v. Paper Converting Machine Co., 832 F.2d 581, 4 U.S.P.Q.2d (BNA) 1621 (Fed. Cir. 1987); Data Line Corp. v. Micro Technologies, Inc., 813 F.2d 1196, 1 U.S.P.Q.2d (BNA) 2052 (Fed. Cir. 1987); Texas Instrument, Inc. v. U.S. Int'l Trade Comm'n, 805 F.3d 1558, 231 U.S.P.Q. (BNA) 833 (Fed. Cir. 1986).

claimed invention. The former situation constitutes "Literal Infringement," while the latter constitutes "infringement under the doctrine of equivalents."[15]

A device or process will literally infringe a claim that employs means plus function language, if it reads on all the elements and limitations of the claim, including the limitations of the means clause. "In order to meet a means plus function limitation, an accused device must (1) perform the identical function recited in the means limitation and (2) perform that function using the structure disclosed in the specification or an equivalent structure."[16]

This two-step approach in the interpretation of means plus function language claims is in accord with the express language of the Statute. As discussed earlier, the Statute both broadens the scope of a patent by claiming all alternative elements that add the same functionality to the invention, and at the same time narrows the range of those alternative elements to structures described in the specification or their equivalents.

Consider once again our claim for the baseball cap invention and assume that a patent was issued for that claim. Also, assume that a manufacturer (M) has introduced to the market a baseball cap with identical characteristics. Only in contrast to our baseball cap, M's baseball cap employs an elastic band instead of a buckle or a button to adjust the size of the head-cover. Does M's baseball cap infringe our patent?

The first two elements of M's baseball cap--the head-cover and the bill--read on the claim language, since they are identical to that of our claim. The only remaining question is whether the elastic band element reads on the limitations of the means clause. M's baseball cap literally infringes our patent if it can be shown[17] that the elastic band, as used in the accused baseball cap, performs the function of adjusting and that it is equivalent to either a button or a buckle.

Clearly, the elastic band is the element that adjusts the size of the head-cover in the accused device. Therefore, the first part of the above-mentioned test requiring identity of functions is satisfied. However, the difficult question is whether the elastic band is an equivalent of a button or a buckle. Under current case law, the elastic band will not be considered an equivalent to a button or a buckle because it is not a "structural equivalent" of those items.[18] Thus, M's baseball cap will not be infringing. However, some have argued that the Statute does

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[15] A device or process literally infringes a claimed invention if it includes every element or limitation of the claim. Builders Concrete, Inc. v. Bremerton Concrete Products Co., 757 F.2d 255, 257, 225 U.S.P.Q. (BNA) 240, 241 (Fed. Cir. 1985). A device or process infringes a claimed invention under the doctrine of equivalents if the product or process performs substantially the same function in substantially the same way to obtain the same result as the claimed invention. Graver Tank & Mfg. Co. v. Linde Air Prods. Co., 339 U.S. 605, 608 (1950).

[16] Carrol Touch, Inc. v. Electro Mechanical Sys., Inc., 15 F.3d 1573, 1578, 27 U.S.P.Q.2d (BNA) 1836, 1840 (Fed. Cir. 1993). *See also* Valmont Indus., Inc. v. Reinke Mfg. Co., 983 F.2d 1039, 1042, 25 U.S.P.Q.2d (BNA) 1451, 1454 (Fed. Cir. 1993).

[17] The patentee has the burden of proving equivalence in an infringement suit. Penwalt Corp. v. Durand-Wayland, Inc., 833 F.2d 931, 934, 4 U.S.P.Q.2d (BNA) 1737, 1739 (Fed. Cir. 1987), *cert. denied*, 485 U.S. 961, 99 L. Ed. 2d 426, 108 S. Ct. 1226 (1988).

[18] *See Carrol Touch*, 15 F.3d at 1577-78, 27 U.S.P.Q.2d at 1840-41. *See also infra*, note 26.

not require equivalency of corresponding embodiments on a structural level, but only requires that they be interchangeable structures. [19]

If the court does not find literal infringement, then a last alternative would be to show that M's baseball cap infringes the patent under the doctrine of equivalents. Under the doctrine, the accused device and the claim are analyzed in terms of equivalency of their overall function rather than the equivalency of elements that comprise the device or the invention.[20] Therefore, in our hypothetical situation, it will be likely for the court to find infringement under the doctrine of equivalents on the basis that the overall function of the baseball cap has remained unchanged.[21]

However, an opposing argument would be that the court should look at the overall function of the rubber band rather than overall function of the device as a whole.[22] Under this view, the manner in which a rubber band functions is completely different from that of a button or a buckle. Thus, this view leads to the conclusion that there is no infringement under the doctrine of equivalence.

If we are to accept the second view regarding the proper application of the doctrine of equivalence, then equivalency test under the doctrine and the Statute becomes indistinguishable. For example, in the above hypothetical invention, the issue under both the Statute and the doctrine of equivalence will be whether the rubber band is an equivalent of a button or a buckle. While, under the first interpretation of the doctrine of equivalence, the issue is the overall equivalence of M's baseball cap and our baseball cap. Ironically, CAFC has held, in numerous occasions, that the test for equivalency under the doctrine of equivalence should not be confused with equivalency test under 35 U.S.C. §112, ¶ 6.[23]

a. Structural Equivalence is not the same as Equivalent Structures.

As discussed above, in determining literal infringement in cases involving the use of means plus language, the court applies a two-step test. First, it determines whether an element of the accused device performs the same function as that described by the means language. Second, it compares the accused element against the structures disclosed in the specification to determine whether they are equivalents.

As said earlier, in our hypothetical situation involving M's baseball cap and our claimed invention, there is no argument that an elastic band and a buckle or a button, under the said circumstances, perform identical functions--that function being the adjustment of the size of the head-cover. However, the difficult question was whether these are equivalents.

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[19] For a detailed discussion of the two views see paragraph II.C.1.a. *infra*.

[20] *Penwalt*, 833 F.2d at 968, 4 U.S.P.Q.2d at 1739.

[21] For a more detailed discussion of infringement under the doctrine of equivalents see paragraph II.C.1.b., *infra*.

[22] *See* Dolly Inc. v. Spaulding & Evenflow Co., 16 F.3d 394, 398-400 (1994) (holding that a child seat that performed the identical overall function as the claimed invention and encompassed all the elements of the invention except for a frame structure was not infringing under the doctrine of equivalents, because the overall function of the frame structure could not be matched with any elements found in the accused device.)

[23] For a detailed discussion of this issue, see paragraph II.C.1.b., *infra*.

The legislative history of the Statute has not set forth a test for determining equivalency. Some courts, however, have interpreted the Statute to require "structural equivalence" between the embodiments described in the specification and the corresponding element in the accused device.[24]

To illustrate, consider the buckle structure that corresponds to the means language of our claim disclosing a baseball cap. Structurally, it is not equivalent to an elastic band. One is a solid structure that is shaped to engage and hold a strap; the other is a flexible strip of rubber. The two are not "structurally equivalent" because they do not have a similar physical construction. Thus, under this view, there is no infringement.

In contrast to the test set forth above, Judge Rich, in his concurring opinion in *Baltimore Therapeutic Equipment Co. v. Loredan Biomedical Inc.*,[25] expressed his disapproval of the majority's position that required "structural equivalence" in order to find infringement. He stated that even though equivalency of structures is a requirement of the Statute, the Statute does not require those elements be equivalent in physical structure and form.[26]

Judge Rich is of the opinion that the application of the Statute is "not subject to any general rule or standard interpretation, but must be made on a case-by-case basis."[27] Under this view, two structures may be equivalent under one circumstance but not in the other, regardless of whether they have similar embodiments or structure. In discussing a hypothetical situation, Judge Rich suggested that two structures should be considered equivalents if "[a]ny worker in the art" would have known the same result could have been equally achieved by either structure.[28]

Consider the above hypothetical baseball cap invention as analyzed under Judge Rich's opinion. For the purposes of this invention, under Judge Rich's view, the rubber band and a buckle or a button are "equivalent structures" or embodiments that perform the same function, even though they are not "structurally equivalent." In other words, any person skilled in the art can easily imagine that a rubber band could be used instead of a buckle or a button to provide means for adjusting the size of a baseball cap. Thus, M's baseball cap would infringe our patented claim under this view.

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[24] *See Carrol Touch*, 15 F.3d at 1577-78, 27 U.S.P.Q.2d at 1840-41 (required that structure of the accused device be the same as or structurally equivalent to the structure disclosed in the specification in order to constitute infringement). *See also* Baltimore Therapeutic Equip. Co. v. Loredan Biomedical Inc., 26 F.3d 138, 30 U.S.P.Q.2d (BNA) 1672 (Fed. Cir. 1994) (*non-precedential opinion*). The Court affirmed the judgment of the district court, holding that the patent was not infringed, because the "structure" of the breaking means as described in the specification was significantly different from the "structure" of the breaking system that was used in the accused device.

[25] 26 F.3d 138, 30 U.S.P.Q.2d (BNA) 1672 (Fed. Cir. 1994) (*non-precedential opinion*). See the previous footnote for a brief discussion of the facts of this case.

[26] *Baltimore*, 26 F.3d at ----, 30 U.S.P.Q.2d at 1676.

[27] *Baltimore*, 26 F.3d at ----, 30 U.S.P.Q.2d at 1678.

[28] *Baltimore*, 26 F.3d at ----, 30 U.S.P.Q.2d at 1677.

The problem with analyzing equivalency under the above view is twofold. On the one hand, it moves away from a bright-line rule that focuses only on the construction of the structures in question, rather than the manner in which they function within the confines of the entire invention or device. On the other hand, it confuses the issue of equivalence, under the Statute, with the test for obviousness that involves "the level of ordinary skill in the art."[29] The issue under 35 U.S.C. §112, ¶ 6 is whether the language of the claim, in light of the specification, has been written broadly enough to include the corresponding structure. It is not whether the structure is obvious to one of ordinary skill.

Recent cases have attempted to clarify the meaning of the word "equivalent" under the Statute. In *Valmont Industries, Inc. v. Reinke Manufacturing Company, Inc.*,[30] the court held that "[i]n the context of section 112, ... an equivalent results from an insubstantial change which adds nothing of significance to the structure, material, or acts disclosed in the patent specification."[31] Also, in a more recent unpublished decision, CAFC upheld a district court's instruction to the jury which stated that "equivalent means" is one that "functions identically and is merely an insubstantial change that adds nothing of significance."[32]

The above definitions, on their own, do little in resolving the ambiguity surrounding the meaning of the word "equivalent." While the "structural equivalence" test provides a bright-line rule that requires comparison of "physical structures," the above holdings seem to move away from that by requiring a case-by-case analysis that focuses on the "significance" of the means element to the invention as a whole.

For example, under the "structural equivalence" approach, M's baseball cap would not infringe our patent because the physical structure of a rubber band is obviously different from that of a buckle or a button. But under the test set forth in *Valmont*, the rubber band arguably does not add anything of significance to the baseball cap invention and therefore is an equivalent structure, and infringing.

b. Equivalency under the doctrine of equivalents is not the same as equivalency under 35 U.S.C. §112, ¶ 6

Despite the ambiguity surrounding the meaning of the word "equivalent" under the Statute, the courts have made it clear in numerous occasions that "[t]he word 'equivalent' in 35

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[29] The obviousness test is applied in order to determine the validity of a claim over a prior art reference. An invention is considered obvious, and therefore unpatentable, if a person reasonably skilled in the art could have come up with the same invention, in light of the prior art references available. *See* Graham v. John Deere Co., 383 U.S. 1, 17-18, 148 U.S.P.Q. 459, 467 (1966).

[30] 983 F.2d 1039, 25 U.S.P.Q.2d (BNA) 1451 (Fed. Cir. 1993).

[31] *Valmont*, 983 F.2d at 1043, 25 U.S.P.Q.2d at 1455. The court held that Valmont patent for an irrigation unit was not infringed under the Statute, because the construction of the accused device did not include a structural equivalent of the control means set forth in the Valmont patent.

[32] Durable Inc. v. Packaging Corp. of Am., 31 U.S.P.Q.2d (BNA) 1513, 1516 (1994) (*non-precedential opinion*).

U.S.C. §112, paragraph 6, should not be confused with the doctrine of equivalents" and that the two are different from each other.[33]

The doctrine of equivalents involves a three-part inquiry of whether the accused device "performs substantially the same *overall* function or work, in substantially the same way,[34] to obtain substantially the same *overall* result as the claimed invention."[35] Thus, the doctrine of equivalents, unlike the Statute, does not require an element by element inspection of the invention and the accused device under a microscope. The single function of individual elements in the accused device and whether the corresponding elements as described in the claimed patent are equivalent to them are not at issue. Instead, the court considers both the invention and the overall function of the accused device in the abstract.

Because the equivalency test under the doctrine is ambiguous, the courts have looked at extrinsic factors to justify the application of the doctrine of equivalents to broaden the scope of a claim. Some have applied the doctrine if the invention benefits from a pioneer status[36] or if it is introduced in a saturated field but produces unpredictable, new or useful results.[37]

The difference between an equivalency test under the Statute and under the doctrine of equivalents becomes clear when the underlying policy for each is examined. Equivalency analysis under the Statute is based on the policy that an inventor should not be able to get such a general patent on an item through the use of means-plus-function language that would preclude another inventor from claiming a substantially new and useful invention that performs the same function.[38] Equivalency analysis under the doctrine of equivalents protects an original inventor against unscrupulous copyists who try to go around his patent by adding an insubstantial change to the original invention.[39]

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[33] *Donaldson*, 16 F.3d at 1195 n.8, 29 U.S.P.Q.2d at 1852 n.8 (citing D.M.I., Inc. v. Deere & Co., 755 F.2d 1570, 225 U.S.P.Q. (BNA) 236 (Fed. Cir. 1985)); *see also Penwalt*, 833 F.2d at 934, 4 U.S.P.Q.2d at 1739; *Valmont*, 983 F.2d at 1042, 25 U.S.P.Q.2d at 1454. For a lengthy discussion on the opposite view (that the equivalency test is the same under the doctrine of equivalents and section 112), see Mark D. Janis, *Unmasking structural equivalency: The intersection of §112, Parag. 6 equivalents and the doctrine of equivalents*, 4 ALB. L.J. SCI. & TECH. 205 (1994). *See also* David Abraham, *In re Donaldson*, 76 J. PAT. & TRADEMARK OFF. SOC'Y 622, 622 (Aug. 1994) (suggesting that the *Graver Tank*'s function-way-result could be one way to determine equivalency between prior art and a new invention under the Statute).

[34] Notice that the focus of the test is not on the structure of the device but on its method of operation. However, it is obvious that method of operation is directly dependent upon a device's structure.

[35] *Penwalt*, 833 F.2d at 968, 4 U.S.P.Q.2d at 1739. See also *Graver Tank*, 339 U.S. at 607 (citing Union Paper-Bag Mach. Co. v. Murphy, 97 U.S. 120 (1877)).

[36] An invention is considered to have a pioneer status if it has made a great contribution to the public or if it is so innovative that there is no other device in the market that can compete with or be compared to it. *Graver Tank*, 339 U.S. at 608.

[37] *Id.*

[38] "Section 112, para. 6, ... limits the [broad language of means-plus-function limitations in combination claims] to equivalents of the structures, materials, or acts in the specification." *Valmont*, 983 F.2d at 1042, 25 U.S.P.Q.2d at 1454.

[39] *Graver Tank*, 339 U.S. at 607.

Thus, application of the doctrine of equivalents leaves the claims themselves undisturbed but "expands the right to exclude 'equivalents' of what is claimed."[40] In contrast, application of the Statute limits the claims to the structural equivalents of the embodiments described in the specification.[41]

The practical differences between the two are summarized below:

1) After *Donaldson*, the Statute is applied both during prosecution proceedings and infringement proceedings. The doctrine of equivalence is applied only during infringement proceedings.

2) The Statute is applicable to interpretation of only those claims that include a means-plus-function language or format. The doctrine of equivalents is applicable to any claim, whether or not the claim includes a means clause.

3) The Statute is applicable in determining whether a device literally infringes a claim. The doctrine of equivalents is an alternative method of proving infringement if a claim of literal infringement is unsuccessful.

4) The Statute is applicable only if the accused structure performs the *identical* function claimed by the means-plus-function language. The doctrine of equivalents is applicable even if the accused structure only performs an *equivalent* function, "so long as the 'way' and 'result' prongs are also satisfied."[42]

2. Patentability determination in the PTO

Prior to *Donaldson*, the PTO's long-held policy was that 35 U.S.C. §112, ¶ 6 is not applicable to prosecution proceedings before the office. The PTO traditionally reads patent claims as broadly as possible to ensure no patent is issued for an invention that is already disclosed in a prior art reference.[43] As part of that practice, the PTO, for some time, contended that it was entitled to read means-plus-function claims independent of any structure set out in the specification, thus, refusing to observe the provisions of the Statute.[44]

Under the above policy, the PTO would reject an application if it determined that its means clause described the same "function" as a prior art reference, unless it was demonstrated that the "structures" described in the specification are not equivalent to the corresponding

[40] Wilson Sporting Goods Co. v. Geoffrey & Assocs., 904 F.2d 677, 684, 14 U.S.P.Q.2d (BNA) 1942, 1948 (Fed. Cir.), *cert. denied*, 498 U.S. 992 (1990).

[41] *See supra* note 40.

[42] Mark D. Janis, *Unmasking structural equivalency: The intersection of §112, Parag. 6 equivalents and the doctrine of equivalents*, 4 ALB. L.J. SCI. & TECH. 205, 212 (1994) (emphasis added).

[43] *In re* Prater, 415 F.2d 1393, 1404-05, 162 U.S.P.Q. (BNA) 541, 547 (C.C.P.A. 1969); *see also Examiner Guidelines are issued on interpreting section 112, paragraph 6 claims,* 47 PAT. TRADEMARK & COPYRIGHT J. 559 (Apr. 28, 1994).

[44] This policy was based on holdings that prohibited limitations found in the specification portion of an application to be imported or read into the claim to narrow its scope. *See Priest*, 582 F.2d at 37, 199 U.S.P.Q. at 15.

structure in the said reference.[45] Thus, unlike the infringement context where the party claiming equivalence bears the burden of proving equivalency,[46] in the prosecution context the applicant had the burden of disproving it.

For example, consider once again our claim disclosing a baseball cap invention. This time, assume the patent is not issued and the patent examiner has found a reference that discloses a baseball cap comprising a bill, a head-cover, and string attachments that may be tied together to adjust the size of the head-cover. Is our invention anticipated by this reference?[47]

Under the PTO's prior policy, the means language in our claim would be interpreted as broadly as possible without regard to the corresponding structures defined in the specification. So, the claim would cover all baseball caps having adjustable head-covers, regardless of how dissimilar the structures that perform this adjusting function may be. Thus, successful allowance of a patent on our baseball cap would depend on whether the examiner could be persuaded that buckles or buttons are not equivalent to strings.

Some have argued that the PTO's prior policy to broadly interpret means-plus-function language is justifiable because it prohibits an applicant from pre-empting new inventions that perform the same function as the claimed invention but which utilize a revolutionary structure or method to perform that function.[48] Although this argument is plausible, it does not justify a need for the existence of a double standard for three reasons: (1) this policy contradicts the Statute on its face, (2) the Statute itself prohibits allowance of broad patent rights by limiting the scope of the claim to the structures described in the specification or their equivalents, and (3) the discriminatory application of the Statute only to infringement proceedings complicates even more the predictability of the outcome of possible future litigation over the scope of a patent claim.[49]

The following example will illustrate why the use of a double standard in an application of the Statute would lead to undesirable results for a patent owner during an infringement proceeding. Assume that we have filed our hypothetical claim for a baseball cap as drafted above. Also assume that the PTO has searched its files and has found a prior reference that discloses the baseball cap that uses a string element to perform the adjusting function. Under the prior PTO policy, our claim would be rejected as obvious or anticipated on the grounds that the

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[45] *See In re* Mulder, 716 F.2d 1542, 1549, 219 U.S.P.Q. (BNA) 189, 196 (Fed. Cir. 1983).

[46] *See supra* note 19.

[47] A prior art reference anticipates a claimed invention if it at least discloses all the elements described in the claim. Amstar Corp. v. Environtech Corp., 730 F.2d 1476, 1484 (Fed. Cir. 1984).

[48] Lionel S. Sobel, Loyola Law School, Los Angles, Professor of Law. He is also a renowned practitioner and authority in the areas of Copyrights and Entertainment Law.

[49] According to George Tseng, who is currently employed with the law firm of Blakely, Sokoloff, Taylor & Zafman which specializes in patent prosecution before the PTO, the unpredictability and the state of flux surrounding the interpretation of 35 U.S.C. § 112, ¶ 6 has prompted one of their biggest clients to forbid the use of means-plus-function language in any of their claims that is submitted to the Patent Office.

adjusting function described by the means language is identical to the function performed by the prior reference's string element.

To overcome that objection, we can amend the claim to read instead: "means for buckling or buttoning portions of head-cover to adjust its size," thereby avoiding identity of functions. Now, consider that the manufacturer, M, introduces a baseball cap to the market which uses a hook mechanism as means to adjust the size of the head-cover. Arguably, a hook mechanism is an equivalent of a buckle or a button and should be considered as infringing the claimed invention. However, in an infringement suit, it will be very difficult to persuade the jury that the accused device is within the scope of our claim. The function of hooking is very different from buttoning or buckling functions, and thus not within the scope of the claim.

In contrast, if the PTO had analyzed the claim's scope, subject to the *Donaldson* standard, the outcome could have been different. The scope of the patent would have been restricted to those baseball caps that employ mechanisms equivalent to a button or a buckle. As a result, the applicant would not have been forced to amend its claim to the limited language of "buckling or buttoning." And finally, in an infringement proceeding, all the patent owner needed to prove was that a hook mechanism is equivalent to a buckle or a button, rather than trying to persuade the jury, in addition, and foremost, that the function of hooking is identical to the functions of buttoning or buckling.

The *Donaldson* decision expressly declared the death of the PTO's long-standing practice of ignoring the provisions of 35 U.S.C. §112, ¶ 6. However, as it will be discussed in the following, the PTO did not give up this practice without putting up a good struggle.

a.* In re Iwahashi*:*[50] *The PTO should interpret means-plus-function language as mandated by 35 U.S.C. §112, ¶ 6

In re Iwahashi is better known as one of the seminal decisions that paved the way for allowance of software patents.[51] However, it is also among the first decisions in the prosecution context[52] that expressly, but in dicta, stated that "each means-plus-function definition 'shall be construed to cover the corresponding structure, material, or acts described in the specification and equivalents thereof.'"[53]

The PTO in response to the holding in *Iwahashi*, in a letter written by James Deny, the Acting Assistant Commissioner for Patents, stated that "[i]n the opinion of the PTO, means-plus-function ... claims should be given their broadest reasonable interpretation," during prosecution.[54]

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[50] 888 F.2d 1379, 12 U.S.P.Q.2d (BNA) 1908 (Fed. Cir. 1989).

[51] In *Iwahashi*, the CAFC reversed the decision of the United States Board of Patent Appeals and Interference that had denied issuance of patent for an algorithm for lack of statutory subject matter.

[52] As opposed to the infringement context.

[53] *In re* Iwahashi, 888 F.2d 1379, ---- 12 U.S.P.Q.2d (BNA) 1908, 1911 (Fed. Cir. 1989).

[54] 1112 OFFICIAL GAZ. PAT. OFF. 16 (Mar. 13, 1990). *See also* 39 PAT. TRADEMARK & COPYRIGHT J. 387, 399.

b. **In re Bond:**[55] ***The PTO should interpret means-plus-function language as mandated by 35 U.S.C. §112, ¶ 6;***

In 1990, two years after the *Iwahashi* decision was handed down, the CAFC reasserted its position regarding literal application of the Statute in a prosecution context in *In re Bond*.[56] The court, which was not sitting *en banc* in this hearing, reiterated the language used in *Iwahashi* and further clarified its meaning in a parenthetical phrase which expressly stated that 35 U.S.C. §112, ¶ 6 is applicable to "PTO proceedings," and that this holding is for the purpose of harmonizing prior case law.[57]

The PTO, adamant in continuing its long-standing policy, fired back with an explicit directive to its examiners to disregard the *Bond* rule,[58] and followed up with a public notice[59] elaborating on its view that it is not bound by the Statute.[60] Thus, the PTO once again refused to follow the holding of the CAFC, requiring narrow interpretation of claims that use means-plus-function language.

D. *In re Donaldson*: The Double Standard is Pronounced Dead

Despite the PTO's determination ignoring the provision of 35 U.S.C. §112, ¶ 6, the CAFC had the last word on this issue. On February 14, 1994, the court pronounced the forty-two-year-old double standard dead, in an *en banc* decision.[61] The following will briefly discuss the facts of this case, the PTO's arguments for upholding the double standard, the court's grounds for rejection of these arguments and, finally, the court's interpretation of the Statute in the prosecution context.

1. Facts of Donaldson, briefly

The patent claim in question (hereinafter, Schuler invention) was for an industrial dust collector. It was rejected by the PTO examiner under 35 U.S.C. §103 for obviousness over a prior patented invention (hereinafter, Swift invention). The Schuler invention employed a diaphragm-like mechanism in the dust collector device that, via an expanding and contracting motion, loosened the gathered dust inside the device prior to its release into a collecting

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[55] 910 F.2d 831, 15 U.S.P.Q.2d (BNA) 1566 (Fed. Cir. 1990).

[56] *Id.* This case involved the rejection of a claim using means-plus-function language to claim an electronic delay element in an answering machine. The rejection was based on both anticipation and obviousness over a prior art reference.

[57] *Id.* at 833.

[58] *See* 41 PAT. TRADEMARK & COPYRIGHT J. 411.

[59] The public notice in pertinent part stated that the PTO will continue it traditional practice despite the ruling in *In re Bond* because "*Lundberg* is binding precedent and can be overruled only by the Federal Circuit sitting en banc." *See* 41 PAT. TRADEMARK & COPYRIGHT J. 411. In *In re Lundberg*, 244 F.2d 543, 113 U.S.P.Q. 530 (CCPA 1957), the United States Court of Custom and Patent Appeals, in an *en banc* decision, held that "limitations in specification not included in claim may not be relied upon to impart patentability to otherwise unpatentable claim," whether language is couched in terms of means-plus-function or consists of detailed recitation of inventive matter.

[60] *See* 43 PAT. TRADEMARK & COPYRIGHT J. 133, 161. *See also Examiner Guidelines are issued on interpreting section 112, paragraph 6 claims,* 47 PAT. TRADEMARK & COPYRIGHT J. 559 (Apr. 28, 1994).

[61] *Donaldson*, 16 F.3d 1189, 29 U.S.P.Q.2d 1845.

chamber. This mechanism was described as "means, responsive to pressure increases" in the claims portion of the application.[62] However, the specification portion of the application disclosed "a diaphragm-like structure which expands outward in response to ... pressure increases" as corresponding with the means-plus-function language used in the claim.

The Swift invention disclosed the use of pulses of gas to achieve the function of loosening the dust. The PTO, according to its policy, broadly interpreted Schuler's claim without limiting it to the structure disclosed in the specification. It reasoned that the means clause performs the same function as disclosed by the Swift invention, without claiming an extra limitation of a diaphragm-like structure. Thus, it rejected the claim on obviousness grounds. The CAFC, in turn, reversed the PTO's decision on the grounds that it had failed to obey the statutory mandate of 35 U.S.C. §112, ¶ 6 in construing Schuler's claim as *not* limited to the diaphragm structure.

2. The PTO's arguments defending its practice as rejected by the Court

The PTO provided the following reasons why the Statute is not applicable to prosecution proceedings:

a. The legislative history of the Statute condones the PTO's practice.

One of the arguments posed by the PTO was that the legislative history of the Statute shows that Congress either intended for the Statute to apply only in infringement proceedings or, in the alternative, it implicitly condoned the PTO's practice by inaction.

In support of the first contention, the PTO cited the commentary of P.J. Federico, one of the drafters of the revised Patent Act of 1952. In that commentary, Federico had stated that the Statute "relates primarily to the construction of such claims for the purposes of determining when the claim is infringed ... and would not appear to have much, if any, applicability in determining the patentability of such claims over the prior art ...."[63]

The CAFC rejected this argument by stating that the above commentary is not considered legislative history because it was a statement by Federico expressing only his personal views and after the act was passed.[64] Further, the CAFC stated that "the plain and unambiguous meaning of a statute prevails in the absence of clearly expressed legislative intent to the contrary."[65]

The PTO, in support of its second contention, provided that Congress, at the time of revision of the Patent Act, knew of the PTO's conflicting practice and did nothing to change it.[66] The CAFC found this argument without merit, stating that there is no evidence that Congress

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[62] *Id.* at 1192.

[63] Federico, Commentary on the New Patent Act, 35 U.S.C.A. 1, 26 (West 1954).

[64] *Donaldson*, 16 F.3d at 1193 n.3, 29 U.S.P.Q.2d at 1852 n.3.

[65] *Id.* at 1192 (citing *Mansell v. Mansell*, 490 U.S. 581, 592, 109 S. Ct. 2023 (1989)).

[66] *Id* at 1193.

was aware of the PTO's policy at the time of re-enactment and, therefore, there were no sufficient indicators of clear Congressional approval or disapproval.[67]

b. The intent of the drafters was to codify the reverse doctrine of equivalents

Another argument set forth by the PTO was that the intent of Congress in enacting the Statute was to codify the "reverse doctrine of equivalents," a claim interpretation tool which is only applied in the litigation context.[68] The Court dismissed this contention as imaginary and without support.[69] It explained that the Statute was drafted to overrule a prior Supreme Court holding in *Halliburton Oil Well Cementing Co. v. Walker*.[70]

c. The PTO's interpretation is entitled to deference

As a last resort, the PTO argued that its sweeping and long-standing practice of not applying the Statute in examination of patent applications should be given deference.[71] This argument was flatly rejected by the CAFC. It stated: "The fact that the PTO may have failed to adhere to a statutory mandate over an extended period of time does not justify its continuing to do so."[72]

3. Important prior case law discussed in Donaldson

a.* In re Lundberg[73] *is expressly overruled

In its holding, the *Donaldson* Court swiftly declared its agenda. The Court held that "paragraph six applies regardless of the context in which the interpretation of means-plus-function language arises, i.e., whether as part of a patentability determination in the PTO or as part of a validity or infringement determination in a court."[74] It then expressly overruled *In re Lundberg* and all its progeny that held otherwise.

b.* In re Prater [75] *and* In re Priest[76] *are distinguished

Further into the decision, the Court clarified the point that its holding is not in conflict with the ruling of *In re Prater*, which provides for the "broadest reasonable interpretation"

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[67] *Id.* at 1193 n.3.

[68] *Id.* at 1194.

[69] *Id.*

[70] 329 U.S. 1 (1946). *See supra* note 12.

[71] *Id.*

[72] *Id.*

[73] 244 F.2d 543, 113 U.S.P.Q. 530 (CCPA 1957).

[74] *Id.* at 1193.

[75] 415 F.2d 1393, 162 U.S.P.Q. (BNA) 541 (C.C.P.A. 1969).

[76] 582 F.2d 33, 199 U.S.P.Q. (BNA) 11 (C.C.P.A. 1978).

during prosecution.[77] It explained that its holding "merely sets a limit on how broadly the PTO may construe means-plus-function language under the rubric of "reasonable interpretation."[78]

The Court also addressed the PTO's argument regarding the decision in *In re Priest*, which held "limitations found only in the specification of a patent or patent application should not be imported or read into a claim." The Court held that the Statute does not call for impermissible imputation of limitations from the specification into a claim, but it requires that the specification be looked at as a guide to determine the meaning of a particular word or phrase recited in a claim.[79]

4. Mandatory two-step approach in interpretation of means-plus-function language

The Court mandated that the Statute is to be interpreted and applied in the same manner at both prosecution and infringement proceedings.[80] Thus, after *Donaldson*, the PTO is required to determine two issues before rejecting a means-plus-function claim based on obviousness or anticipation: first, it has to determine whether the means clause discloses a "function" that is identical to a function already performed by a prior invention; and second, it needs to decide whether the corresponding "structure" disclosed in the specification is the same or an equivalent of the structure of the prior art element that performs the identical function.[81]

As discussed above, under the traditional approach, all the PTO needed to prove was that a prior art reference performed the identical function as that claimed by the means language. After *Donaldson*, the PTO has the burden of proving that the corresponding structure described in the specification not only performs the identical function, but that it also is the same or an equivalent of the prior art structure. Thus, *Donaldson,* in effect, shifts the burden of proof from the applicant to the PTO examiner.

Consider the same hypothetical situation involving our claim for a baseball cap and a prior art reference which employs strings as means for adjusting the size of the head-cover. As discussed, under the traditional PTO policy, our claim could have been rejected based on the mere showing that the function claimed by the means clause was the same as the one disclosed by the prior art reference--the string and the button or the buckle are all means for adjusting the size of the head-cover. But under *Donaldson*, the PTO has to prove, in addition to the above, that a button or a buckle is the same or equivalent of a string, rather than forcing the applicant to prove the contrary.

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[77] *Prater*, 415 F.2d at 1194, 162 U.S.P.Q. at 1395-96.

[78] *Id.*

[79] *Donaldson*, 16 F.3d at 1195, 29 U.S.P.Q.2d at 1850 (citing Du Pont de Nemours & Co. v. Phillips Petroleum Co., 849 F.2d 1430, 1433, 7 U.S.P.Q.2d (BNA) 1129, 1131 (Fed. Cir. 1988).

[80] *Donaldson*, 16 F.3d at 1193, 29 U.S.P.Q.2d at 1849.

[81] *Id.* at 1197. The order in which the two issues are decided is unimportant. *Baltimore*, 26 F.3d 138, 30 U.S.P.Q.2d 1672.

E. The aftermath of *Donaldson*

While it is true that the controversial *Donaldson* decision was important in that it ended a forty-year period of double standards in the interpretation of 35 U.S.C. §112, ¶ 6, it did not effectively resolve any of the practical problems that existed in application of the Statute. For example, the Court did not make any attempt to clarify the meaning of the word "equivalent," which has also been problematic in the infringement context.[82] In addition, it did not provide any guidelines for the PTO on the minimum requirements for a prima facie showing of equivalence.

The PTO, perhaps to clarify its position almost a month after the *Donaldson* decision, distributed the examiner guidelines on the application of the Statute.[83] The guidelines include directions on how an examiner can identify means-plus-function language[84] and how he should interpret such language. The guidelines also suggest a number of indicia for determination of equivalency. However, as will be discussed in the following, this indicia further perplex the interpretation of the word "equivalent."

1. Meaning of "equivalent" remains vague

Some have rightly argued that the shortcoming of the *Donaldson* decision is that the Court failed to address the issue of equivalency determination.[85] The only reference made by the Court regarding the test for equivalency was in a footnote, indicating that the word "equivalent" under the Statute should not be confused with the doctrine of equivalents.[86]

Another shortcoming of this decision was providing insufficient guidelines as to the minimum requirements for a showing of equivalency. Even though the Court provided that the burden will shift to the applicant to prove non-equivalence once the examiner has made a prima facie showing of equivalence between both the functions and the structures, it did not indicate how the examiner can make that showing. Would it be sufficient simply for the patent examiner to say that he has found the structures disclosed in the specification and the prior art to be equivalents of each other, or does he have to support his claim by means other than his personal opinion?

After all, if all that is needed for shifting the burden of proof is the personal opinion of the examiner, in effect, there remains little difference between requirements for rejection before and after the *Donaldson* decision. In both situations, the applicant is the one who will ultimately bear the burden of proving non-equivalence, because the examiner is not required to support his

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[82] *See supra* paragraph II.C.1.

[83] *Examiner Guidelines are issued on interpreting section 112, paragraph 6 claims,* 47 PAT. TRADEMARK & COPYRIGHT J. 559 (Apr. 28, 1994).

[84] The guidelines provide that use of "no magic language" is required to qualify a claim as a functional claim. *Id.*

[85] *See* Thomas L. Stoll, Kara A. Farnandez, *Means for functioning in a vacuum?*, 76 J. PAT. & TRADEMARK OFF. SOC'Y 239 (Apr. 1994). Authors of the article, two PTO examiners, frustrated by lack of a clear definition for the word "equivalent," went as far as to suggest that the legislature should redraft the Statute to clarify its meaning.

[86] *Donaldson*, 16 F.3d at 1195 n.8, 29 U.S.P.Q.2d at 1852 n.8.

personal interpretation by extrinsic evidence such as expert testimony or affidavit evidence of facts in support of his arguments.[87]

2. PTO guidelines on new application of 35 U.S.C. §112, ¶ 6 during prosecution

Examiner guidelines were distributed on April 22, 1994 by the PTO to attendees of the AIPLA Spring Stated Meeting in Cleveland.[88] These guidelines reaffirm the procedural requirements set forth in *Donaldson*, regarding the application of the two-step test and the shift of burden of proof during *exparte* prosecution proceedings. In addition, they provide insights on the new policy of the PTO regarding the interpretation of means plus function language.

The guidelines explain that if an application claims an identical function that also occurs in a prior art reference, then "an examiner carries the initial burden of proof for showing that the prior art structure or step is the same as or equivalent to the structure, material, or acts described in the specification which has been identified as corresponding to the claimed means or step plus function."[89] The guidelines further provide that in case the specification does not describe a structure or an embodiment to correspond to the function claimed by the means clause, then the examiner would only have to determine the equivalency of the functions in order to shift the burden to the applicant.[90]

Following the guidelines is a list of alternative methods by which an applicant can rebut the examiner's finding of equivalence.[91] The applicant may point out the teachings in the specification, or the teachings in the prior art reference, as being contrary to each other, and thereby suggest non-equivalency of the elements to support his argument. Also, under Manual of Patent Examining Practice (MPEP), Rule 1.132, an applicant may provide affidavit evidence of facts.[92]

The guidelines define an "equivalent" as embracing more than the specific elements described in the specification for performing the specified function, but less than any element that performs the function specified in the claim.[93] In other words, the guidelines state that

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[87] It is very easy for the examiner to merely say that the function and the corresponding structures are equivalents, thus shifting the burden to the applicant to provide actual support to the contrary.

[88] *See supra* note 85.

[89] *Examiner Guidelines are issued on interpreting section 112, paragraph 6 claims,* 47 PAT. TRADEMARK & COPYRIGHT J. 559 (Apr. 28, 1994).

[90] *Id.*

[91] *Id.* Note, it does not provide any methods by which the examiner could make a prima facie case of equivalence.

[92] Manual of Patent Examining Practice, Rule 1.132 provides: "When any claim of an application or a patent under ... is rejected on reference to ..., affidavits or declarations traversing these references ... may be received." Generally during an infringement proceeding the parties can introduce expert testimony in court through expert witnesses. The same may be accomplished under Rule 132, since the applicant cannot introduce an expert witness to the PTO the way it can be done in court. However, note that under the MPEP there are no provisions for the examiner to introduce expert testimony or any affidavit of facts to support his position in finding equivalence.

[93] *Examiner Guidelines are issued on interpreting section 112, paragraph 6 claims,* 47 PAT. TRADEMARK & COPYRIGHT J. 559 (Apr. 28, 1994).

"equivalent" can be interpreted very broadly and there cannot be provides a clear definition for it. However, the guidelines go further and suggest the following indicia as indications of equivalency:[94]

(1) the prior art element performs the claimed function in "substantially the same way producing substantially the same result" as the disclosed element;
(2) the prior art element is "interchangeable" with the disclosed element;
(3) the prior art element is the "structural equivalent" of the disclosed element;
(4) the disclosed element is an "insubstantial change" to the prior art element, adding nothing of significance.

Unfortunately, the above indicia not only fail to clarify the meaning of "equivalent," but they further confuse the issue in light of the prior case law. The first indicium is the same test that is used in determining infringement under the doctrine of equivalents. As we discussed in this article, prior decisions, including *Donaldson*, have held time and time again that the test for equivalency under 35 U.S.C. §112, ¶ 6 should not be confused with the doctrine of equivalents.[95] Yet, the PTO has considered it as a way to determine equivalency under the Statute.

The second indicium adds nothing of importance because the term "interchangeable" is as vague as the word "equivalent." Besides, it ignores the requirement for equivalency of structures. For example, consider our baseball cap invention that employs buckles or buttons as adjusting means. Under the above indicium, our invention would be obvious or anticipated in light of the prior art baseball cap with the string attachments. A button or a buckle can replace a string and is therefore interchangeable with it, even though it is not an equivalent. Thus, the interchangeability test becomes more like a test for determining "functional equivalence" rather than a test for determining equivalence of structures.

The third indicium requiring "structural equivalence" is also problematic. It has been argued that "structural equivalence" is not the same as "equivalent structures."[96] Thus, "structural equivalence" does not seem like a dependable factor that one can rely upon during writing or examining a patent application.

Finally, the forth indicium requiring an "insubstantial change" is the only one that seems to be a feasible test for the practitioner and the examiner, both to understand and to apply. It is also supported by prior case law as a test used during infringement proceedings for determining equivalency under 35 U.S.C. §112, ¶ 6.[97] Although there has been no elaboration on the meaning of the term "insubstantial change" itself, it is a standard that is less vague in

[94] *Id. See also* 1162 OFFICIAL GAZ. PAT. OFF. 1 (May 3, 1994).

[95] *See supra* note 35.

[96] *See* paragraph II.C.1.a.

[97] *See supra* notes 33, 34.

interpretation and application. Ironically, even this test is one that has been used in the determination of equivalency under the doctrine of equivalence.[98]

3. What to expect and recommendations on how to use means-plus-function language after Donaldson

Despite the fact that interpretation of the Statute remains uncertain,[99] one thing is certain after *Donaldson*: consistent treatment of claims during prosecution and infringement proceedings. After *Donaldson*, the examiners will have to spend more time examining claims that include means-plus-function language because, in addition to finding of functional equivalence, they need to make a prima facie showing of equivalence between the structures that perform the same function.

Donaldson also makes the job of the patent practitioner more difficult. The practitioner will have to draft the claims and the specification with utmost care when using means-plus-function language. Careless inclusion or exclusion of certain functions or structures may unduly narrow the scope of the claim, since the Statute, in effect, limits the scope of the patent to the corresponding embodiments described in the specification.

Another point of caution for the practitioner arises in a situation where the claims are rejected under the Statute. A practitioner should carefully choose his rebuttal arguments and other options in such situations. Inappropriate arguments or amendments made can lead to creation of prosecution history estoppel.[100]

In general, if the PTO rejects a claim under 35 U.S.C. §112, ¶ 6, the applicant has the following alternatives:

(1) replace the means-plus-function language with structural or other appropriate language;
(2) amend the claims so that there remains no identity of functions;
(3) amend the specification so that there remains no equivalence of structures;
(4) rebut the PTO's finding of identity of functions;
(5) rebut the PTO's finding of equivalency of structures.

Experienced practitioners[101] discourage the use of means-plus-function language if other suitable alternatives are available. A broad generic term that describes an item based on its function is a good substitute for the means clause. For example, in our baseball cap invention,

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[98] *See Graver Tank*, 339 U.S. at 607. The court stated that the doctrine of equivalents is available to protect the patentee from the "unscrupulous copyist" who has made "unimportant and insubstantial changes and substitutions in the patent ...."

[99] See discussion in paragraph II.E.1.

[100] Prosecution history estoppel is a doctrine that precludes the applicant from contending that his patent claim covers subject matter that has been surrendered during the process of prosecution in order to obtain a patent over the examiner's rejection. *See* Exhibit Supply co. v. Ace Patents Corp., 315 U.S. 126, 52 U.S.P.Q. (BNA) 275 (1942).

[101] Jeffrey Sheldon, Senior partner in the law firm of Sheldon & Mak and Loyola Law School Professor, suggests that "[m]eans clauses are to be avoided when an equivalent generic word covers the same breadth as the means clause." JEFFREY G. SHELDON, HOW TO WRITE A PATENT APPLICATION, 6-89 (Practicing Law Institute 1993).

the means language can be replaced by the generic term, fastener. In situations where a generic term is not available, the practitioner may want to use a Markush group.[102] However, the practitioner should be fully aware of the implications of using such language, as its use should be limited to specific circumstances.[103]

If use of means language[104] is unavoidable, then the practitioner should include as much functional language for the means clause as possible. Thus, if the examiner finds one of the functions identical to that of a prior art reference, presence of other functions can prevent a finding of anticipation or obviousness.

For example, assume that we change the means clause used in our baseball cap claim to read: "means functionally engaged with the head-cover for enlarging or reducing or adjusting the size of the head-cover." If the PTO rejects our claim in light of the baseball cap with the string attachments, it can be argued that the function performed by the strings is not identical to what has been claimed. In particular, all the string can do is to adjust the size of the head-cover by reducing its diameter, while a button or a buckle can arguably both reduce and enlarge the size of the head-cover.

To protect the inventor from future copyists, the practitioner should include in the specification as many structures as reasonably possible and use the broadest terms available to describe them. Disclosing multiple structures not only broadens the scope of the claim itself, it also provides for a greater number of available equivalents. In other words, if the structure of a competing device is not found *identical* to any one of the disclosed embodiments, the odds are that it may be found *equivalent* to one of them.

It is a good idea to choose structures that perform the same function but have dissimilar embodiments. This will make it very difficult for the examiner to find a prior art reference with a structure equivalent to all the different embodiments. Also, in an infringement suit, the patentee has a better chance of proving equivalence.

As noted above, as a last resort, the applicant can always try to rebut the examiner's rejection by either disputing the identity of the functions or rebutting the equivalency of the structures. The PTO guidelines permit submission of expert opinion testimony in the form of an affidavit of facts to support applicant's argument against equivalence.[105] Other methods, such as a request for an interview with the examiner or an offer for a field test or presentation, may also be available to the applicant at the discretion of the examiner.

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[102] *See supra* note 10.

[103] As noted above, the disadvantage of a Markush claim is that it is an inclusive collection, and the members of the group have to be similar in nature. *Id.*

[104] Under the PTO guidelines use of the word "means" or similar terms is not necessary for the PTO to treat the claim as a means-plus-function. Any functional language describing an element can trigger a §112 analysis. *See Examiner Guidelines are issued on interpreting section 112, paragraph 6 claims,* 47 PAT. TRADEMARK & COPYRIGHT J. 559 (Apr. 28, 1994).

[105] *See supra* note 94.

In making the arguments or representations, the applicant should try to emphasize the significance of the cited structure to the invention and the way the function is performed, rather than only arguing dissimilarity of structures or functions.[106] For example, if the examiner has rejected our baseball cap utilizing a buckle or button over the prior art baseball cap that utilizes the string attachments, the applicant should argue the advantages of a buckle or button, such as ease of use, durability, etc., as well as dissimilarity of their structure to the strings.

III. *Conclusion*

Surely, by this time, you have realized that writing a recipe may be more rewarding than writing a patent application that utilizes means-plus-function language. The former may result in a fruit cake, while the latter most probably will lead to more prosecution before the PTO or future litigation in court.

The amount of litigation can be reduced if the CAFC and the PTO can agree on a more applicable standard for determining equivalency. *Donaldson* has already harmonized the application of 35 U.S.C. §112, ¶ 6. What remains to be seen is a case that would provide a feasible standard for interpretation of the Statute, as it relates to the meaning of the word "equivalent." The movement for defining the meaning of the word "equivalent" should be toward a bright line inquiry, rather than a case-by-case analysis or the standard of "interchangeability of structures" as suggested by Judge Rich's concurring opinion in *Baltimore Therapeutic*.[107]

Despite the lack of legislative history, it is clear that the intent of the Statute is to facilitate the job of the practitioner by permitting him to broadly claim a range of alternative elements that perform the same function by employing a single means clause, thus eliminating the necessity to write a separate claim for each alternative element. The Statute does not intend to expand the scope of the claim to structures that were not even considered by an inventor at the time of filing. Thus, the narrowest interpretation of the word "equivalent" is most desirable.

An appropriate standard would be a combination of the "structural equivalence" test as set out by the majority opinion in *Baltimore Therapeutic* and the requirement of "insubstantial change that adds nothing of significance to the *structure*" as set out in *Valmont*. Both these tests focus on the limitations that are inherent in the construction of the structures, rather than the manner in which those structures perform in a certain function. Although the aforementioned tests are rather subjective, in application, they are less confusing. For example, the difference between the structure of a button and a rubber band is more apparent than the manner in which they work.

Some may argue that such a physically based standard will make it easy for an infringer or a new applicant to go around a prior patented invention by claiming or making a slightly different device. These arguments, however, are moot in light of other safeguards, such as the

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[106] This is a good way for preserving the record for appeal or even for possible infringement situations because, as discussed above, a number of cases have found equivalency under the Statute on the ground that the structure does not add anything of "significance" to the whole invention. *See supra* notes 33, 34.

[107] *See* paragraph II.C.1.a. *supra*.

requirement for non-obviousness[108] and the doctrine of equivalents that have been developed to properly address these concerns.

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[108] *See* 35 U.S.C.A. §103 (West 1984).